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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,973	10/20/2004	Guido Odilon Maurits D'Hoogh	BE 020010	9115

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EXAMINER

RU, POWEN

ART UNIT

PAPER NUMBER

2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/511,973

Applicant(s)

D'HOOGH, GUIDO ODILON
MAURITS

Examiner

Powen Ru

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 2-7 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is the initial office action based on the application filed on 10/13/2006.

Claims 2-11 are currently pending and have been considered below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2-7 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. (6,236,733).

Claim 11: Kato discloses a loudspeaker (Fig. 1b) comprising
a frame (5, col 4 lines 2-6);
a diaphragm (8, col 4 lines 11-19) comprising
an outer conical first diaphragm body (portion with outer periphery) and
an inner conical second diaphragm body (portion with inner periphery),

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said first and second diaphragm bodies each body having a base portion (the portion toward the edge 9) and a top portion (the portion toward the center cap 11),

the top portion of the first diaphragm body and the base portion of the second diaphragm body being interconnected (folded at ridge 8a, col 4 27-31);

electric driving means (assembly of magnetic circuit 4, voice coil 7, and bobbin 6) for moving the diaphragm along an axis of translation with respect to the frame (see Fig. 1b),

said diaphragm running round the axis of translation (see Fig. 1b),

said electric driving means including

a stationary part (magnetic circuit 4, col3 lines 61-67) connected to the frame (via non-labeled through holes near numeral 1, col 4 lines 3-5) and

a movable part (voice coil 7 and bobbin 6, col 4 lines 7-10) attached to the top portion of the second diaphragm body (at inner hole 8c, col 4 lines 11-19); and

suspension means (edge 9 and damper 10) for suspending the diaphragm from the frame (see Fig. 1b),

said suspension means including

first flexible suspension means (edge 9) coupling the base portion of the first diaphragm body to the frame (col 4 lines 19-27),

second flexible suspension means (damper 10) coupling the top portion of the first diaphragm body and/or the base portion of the second diaphragm body (ridge 8a, col 4 lines 42-46) to the frame (col 4 lines 37-41, see Fig. 1b).

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Claim 2: Kato discloses the loudspeaker as in Claim 1; and further discloses that the electric driving means is

positioned opposite to the second diaphragm body (i.e., the magnetic circuit being positioned at the lower side which is opposite to the inner portion of the diaphragm 8 at the upper side, Fig. 1b) and

at least partly inside the first diaphragm body (i.e., the magnetic circuit being positioned at the center which is considered as inside relative to the outer portion of the diaphragm 8, see Fig. 1a and 1b).

Claim 3: Kato discloses the loudspeaker as in Claim 1; and further discloses that the stationary part of the electric driving means includes a magnetic yoke (1, Fig. 1b) with a permanent magnet (3, col 3 lines 63-64) and

the movable part of the electric driving means includes a driving coil (7) for an electro-magnetic cooperation with the magnetic yoke (through pole piece 1a, col 4 lines 8-10).

Claim 4: Kato discloses the loudspeaker as in Claim 1; and further discloses a mounting element (adhesive, col 4 lines 24-25) fixed to the frame (adhered to frame 5),

the first flexible suspension means being attached between the base portion of the first diaphragm body and the mounting element (i.e., the edge 9 being attached between the outer periphery of the diaphragm 8 and the adhesive on the frame 5, col 4 lines 21-25).

Claim 5: Kato discloses the loudspeaker as in Claim 1; and further discloses that the second flexible suspension means is a radial bearing means (col 4 lines 37-43).

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Claim 6: Kato discloses the loudspeaker as in Claim 1; and further discloses a mounting structure (plate 2, magnet 3, and yoke 1 with through holes) fixed to the frame,

the second flexible suspension means being attached to the first and/or second diaphragm body (at ridge 8a) and the mechanical structure (plate 2, see Fig. 1b).

Claim 7: Kato discloses the loudspeaker as in Claim 6; and further discloses that the mechanical structure includes a mounting element (e.g., inherently, there must be a screw to a hole securing yoke 1 on frame 5, see Fig. 5) secured to the stationary part of the electric driving means.

Claim 9: Kato discloses the loudspeaker as in Claim 1; and further discloses that the first diaphragm body and the second diaphragm body form an integral diaphragm body (see Fig. 3).

Claim 10: Kato teaches a loudspeaker unit (e.g., loudspeaker disposed in a flat display, col 2 lines 5-12) provided with an enclosure (casing, col 2, line 7) and a built-in loudspeaker (thin loudspeaker, col 2 line 10). See preceding argument with respect to Claim 1 for the detailed structure of the built-in loudspeaker.

Allowable Subject Matter

3. Claim 8 is objected to as being dependent upon a rejected base claim (Claim 7), but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of prior art teaches a central support

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located at the axis of translation of the diaphragm in combination with all of the limitations of the base claim.

Response to Arguments

4. Applicant's arguments with respect to Claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

5. The examiner appreciates the attorney's authorization to add "directly" in front of each "coupling" in Claims 10-11 during a telephone interview with Edward W. Goodman on 12/14/2006. However, the added limitation still cannot make the claimed invention distinguishable from later found reference. Therefore the corresponding examiner's amendment has not been made.

6. The examiner considers the applicant pointing out that each of Sakamoto's diaphragm body is a dome instead of a cone (page 9 para 2 of Remarks). However, the applicant does not specifically claim that the diaphragm body is a cone. Actually, "conical diaphragm body" is claimed. According to Merriam-Webster Dictionary, "conical" means resembling a "cone" of which the first meaning is the scaly usually ovate fruit of trees of most conifer. Therefore, Sakamoto's diaphragm body and Kato's diaphragm body appear to be conical.

Conclusion

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed; and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ito et al. (6,944,310) discloses a speaker apparatus teaching that cone-type speaker is generally used as a low tone speaker having a large caliber and the dome-type speaker is used as a middle and high tone speaker having a small-caliber as vibration plate; Abe et al. (6,929,092) discloses a speaker diaphragm having a conical shape, but it may have a planar shape or dome shape; Hanada (7,142,687) discloses an electroacoustic converter applied to a drive system composed of voice coils and magnetic circuits in a cone-type speaker, dome-type speaker, etc.; and

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Mazarakis (6,956,953) discloses an electroacoustic transducer with field replaceable diaphragm carrying two interlaced coils.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Powen Ru whose telephone number is 571-270-1050. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm EST/EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7654. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SINH TRAN
SUPERVISORY PATENT EXAMINER

PR
12/19/2006